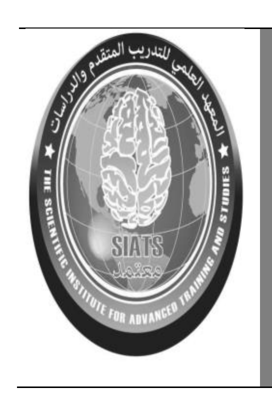


SIATS Journals

Journal of Islamic Studies and Thought for Specialized Researches

(JISTSR)

Journal home page: http://www.siats.co.uk



مجلة الدراسات الإسلامية والفكر للبحوث التخصصية

المجلد3 ، العدد 3، تموز، يوليو 2017م.

e-ISSN: 2289-9065

The Scientific Miracle of the Qur'an The 3D Technology & Expansion of the Universe

الأستاذ: عبد الله حمد سعيد الجنيبي

الأستاذ المشارك د/ عدنان بن محمد يوسف

الأستاذ المشارك د/ نجم عبدالرحمن خلف

الأستاذ المشارك د/ محمد مستقيم بن محمد ظريف

جامعة العلوم الإسلامية الماليزية/ ماليزيا

azzad_1998@hotmail.com

1438هـ – 2017م

ARTICLE INFO

Article history:
Received 2/5/2017
Received in revised form19 /5/2017
Accepted 15/6/2017
Available online 15/7/2017

Keywords:
Insert keywords for your paper

ABSTRACT

"And the heaven We have constructed with might, and verily, We are steadily expanding it." (The Quran 51:47)
This expansion of the Heaven or the universe was incomprehensible to people when the verse explained above was revealed to Muhammad more than 14 hundred years ago. It was only hundreds of years later that the facts about the expansion of the universe were discovered by scientists. In 1929, Edwin Hubble plotted redshift against relative distance and found that the redshift of distant galaxies increased as a linear function of their distance. The only explanation for this observation is that the universe was expanding.
This fact has been even more highlighted by modern state-of-the-art technology after the invention of ESO's Multi-Unit Spectroscopic Explorer (MUSE), which released 3D images of the deep, expanding universe.



Introduction

In 1929, the well-known astronomer, Edwin Hubble, discovered that the universe is expanding.

Before him, the Austrian Physicist Christian Doppler argued that the Doppler effect or shift is the change in frequency of a wave of an observer moving relative to its source. The Doppler effect for electromagnetic waves, like light, has been of great use in astronomy. It results in the so-called redshift or blueshift. It has been used to measure the speed at which stars and galaxies are approaching or receding from us. This may be used to measure the rotational speed of stars and galaxies. Redshift is also used to measure the expansion of space.

When Einstein developed his theory of gravity. His equations said that the universe should be either expanding or collapsing. Other physicists and mathematicians working on Einstein's theory of gravity discovered the equations had some solutions that described an expanding universe. In these solutions, the light coming from distant objects would be redshifted as it traveled through the expanding universe. The redshift would increase with increasing distance to the object.

In 1929 Edwin Hubble measured the redshifts of a number of distant galaxies. He also measured their relative distances by measuring the apparent brightness of a class of variable stars called Cepheids in each galaxy. When he plotted redshift against relative distance, he found that the redshift of distant galaxies increased as a linear function of their distance. The only explanation for this observation is that the universe was expanding.

The Glorious Qur’an, which was revealed, more than fourteen centuries ago, unto the Prophet Muhammad, peace be upon him, and an illiterate, primitive community that lived in the Arabian Desert, stated these scientific facts about the expanding universe:

وَالسَّمَاءَ بَنَيْنَاهَا بِأَيْدٍ وَإِنَّا لَمُوسِعُونَ (سورة الذاريات: 47)

“*And the heaven We have constructed with might, and verily, We are steadily expanding it*.” (The Quran 51:47)

This fact was confirmed by NASA’s great observatories, notably the Hubble Space Telescope (HST) that was launched into low earth orbit in 1990, and is still in operation. The telescope’s capacity has been extended to a great extent by the introduction of a new three dimensional device that opened further dimensions



in astronomy. The ESO's Multi-Unit Spectroscopic Explorer (MUSE) has now released a new 3D deep field image that exceeded that which was collected by the Hubble. It released great 3D images of the ever expanding universe. Technology is opening new horizons in science. More discoveries and state-of-the-art technologies are in the pipeline to explore the universe and find more proofs of the scientific miracles of the Glorious Qur'an.

An Expanding Universe

In the Glorious Qur'an we read:

وَالسَّمَاءَ بَنَيْنَاهَا بِأَيْدٍ وَإِنَّا لَمُوسِعُونَ (سورة الذاريات: 47)

"And the heaven We have constructed with might, and verily, We are steadily expanding it." (The Quran 51:47)

In order to understand the scientific miracle of the Qur'an, we have to understand the level of science at the time of revelation of the Qur'an. At that time, during the seventh century, the minds of people were stuffed with superstitions and groundless beliefs and they knew nothing about the scientific facts that were discovered in the modern age. Amidst such an environment came the revelation from the Almighty, Who created the universe and is best aware of it and every minute thing in it. Though the Qur'an is not a book of science but it has many accurate scientific facts that were proved by modern science.

The word heaven as described in this verse is used in various places in the Quran with the meaning of space and universe. Here again the word is used with this meaning in other words, in the Quran it is communicated that the universe expands, and this is the very conclusion the science has reached today. Until the dawn of the 20th century, the only view provided in the world of science was that the universe has a constant nature and it has existed since infinite time. The research, observations and calculations carried out by means of modern technology however, revealed that the universe in fact had a beginning and constantly expands. At the beginning of 20th century the Russian physicist Alexander Fried Mann and Belgian cosmologist George Lemaitre theoretically calculated that the universe is in constant motion and it is expanding .This fact is proved also by the observation of Daise 1929 while observing the sky by telescope Edwin Hubble, the American Astronomer discovered that the stars and galaxies were constantly moving away from each other. A universe when everything constantly moves away from each other implied a constantly expanding universe. The observation carried out following has verified that the



universe constantly expands. This fact is explained in the Quran when it was yet unknown by any one. This is because the Quran is the word of God the Creator and the Ruler of entire universe. Nobel Laureate Brian Schmidt won Noble award for his research and studies that proved the continuous expansion of the universe. This expansion of the Heaven or the universe was incomprehensible to people when the verse explained above was revealed to Muhammad more than 14 hundred years ago. It was only hundreds of years later that the facts about the expansion of the universe were discovered by scientists. Physicists and mathematicians working on Einstein's theory of gravity discovered the equations had some solutions that described an expanding universe. In these solutions, the light coming from distant objects would be redshifted as it traveled through the expanding universe. At the beginning of 20th century the Russian physicist Alexander Fried Mann and Belgian cosmologist George Lemaitre theoretically calculated that the universe is in constant motion and it is expanding. In 1929 Edwin Hubble plotted redshift against relative distance and found that the redshift of distant galaxies increased as a linear function of their distance. The only explanation for this observation is that the universe was expanding.

According to Maurice Bucaille, in his book, *The Bible, the Qur'an and Science,* " The expansion of the universe was first suggested by the general theory of relativity and is supported by the calculations of astrophysics. The regular movement of the galactic light towards the red section of the spectrum is explained by the distancing of one galaxy from another. Thus, the size of the universe appears to be progressively increasing."

“Not only is the universe so wide and infinitely vast, but it is also expanding: Interestingly, as the universe expands, the size of the observable portion will grow—but only up to a point. Gott and his colleagues showed that eventually there will be a limit to the observable universe’s radius: 62 billion light-years. Because of the accelerating expansion of the universe, galaxies are fleeing from us (and each other) at an ever-hastening pace. Consequently, over time, more and more galaxies will move beyond the observable horizon. Turning once again to our relay race analogy, we imagine that if the players get faster and faster as the race goes on, there will be more and more who were so far away when they first threw the ball that the light would never have had time to reach us.”[i]



Wonderful Galaxies

Another verse in the Holy Qur’an refers to the expansion of the universe:

"فَلَا أُقْسِمُ بِالْخُنَّسِ، الْجَوَارِ الْكُنَّسِ" (سورة التكوير 15-16)

"So verily, I swear by the stars that recede, And by the stars that move swiftly and hide themselves." (The Qur'an 81:15-16)

The stars referred to here are those which turn in their orbit, and are characterized by their swift movement and temporary disappearance. We should know that the words of the Qur'an are more accurate than the terms use by Western scientists. They call these receding stars as 'black hole', which was mentioned some years ago by one scientist who thought that there are gaps in the sky or black holes, but these holes proved to be very heavy bodies weighing billions and billions of tons concentrated within a narrow circle called 'black hole'.

Fraser Cain, on **"Universe Today"** Website puts forth the question, "**How Can Galaxies Move Away Faster Than Speed of Light?**" He answers as follows:

"As you know, most of the galaxies in the Universe are expanding away from us because of the Big Bang, and the subsequent effects of dark energy, which is providing an additional accelerating force on the expansion of the Universe.

"Galaxies, like our own Milky Way are carried along by the expansion of the Universe, and will move apart from every other galaxy, unless they’re close enough to hold together with gravity.

"As you look at galaxies further and further away, they appear to be moving faster and faster away from us. And it is possible that they could eventually appear to be moving away from us faster than light. At that point, light leaving the distant galaxy would never reach us.

"When that happens, the distant galaxy would just fade away as the last of the photons reached Earth, and then we would never know it was ever there.

"One sad side effect of this expansion is that most of the galaxies will have receded over this horizon in about 3 trillion years, and future cosmologists will never know there’s a great big Universe out there."[ii]

The 3D Images of the Universe: MUSE

Thanks to Allah Almighty every now and then science unfolds new facts and invents new tools and instruments that show man wonderful signs in the universe. More than fourteen centuries ago, the Holy Qur’an requested us to explore the



universe to understand the signs of His existence and greatness, on the one hand, and to understand the scientific hints in the Qur'an which prove that the revealer of this book is the Creator of this vast universe. One of these tools and instruments is the Multi-Unit Spectroscopic Explorer (MUSE), which has enable scientists to produce 3D images of the deep universe and show use more clearly the great depth and continuous expansion of the universe, as indicated in the aforementioned Qur'anic verse.

Lisa Winter, on IFL Science website, wrote under the title "**ESO's MUSE Gets Incredible 3D Look at Deep Universe**," about this instrument:[iii]

"In 1995, scientists working with the Hubble Space Telescope released an image of the deep sky that was taken over several days. It revealed thousands of galaxies and was even able to detect light from ancient galaxies of the early universe. The ESO's Multi-Unit Spectroscopic Explorer (MUSE) on the Very Large Telescope has now released a new 3D deep field image that exceeded that which was collected by the Hubble. This new deep field observation was described in a new paper published in Astronomy & Astrophysics. Not only will this allow astronomers to better see the galaxies, but they will be able to study their respective spectra as well. MUSE was able to collect data for 90,000 spectra, providing unprecedented insight into the composition, distance, and internal motion of 189 objects in the night sky. Excitingly, some of the galaxies included in this group existed in the infancy of the universe, coming into existence during the first billion years. The younger, more nearby galaxies will be able to be analyzed in much greater detail, significantly improving astronomers' understanding of them.

"Now that we have demonstrated MUSE's unique capabilities for exploring the deep Universe, we are going to look at other deep fields, such as the Hubble Ultra Deep field. We will be able to study thousands of galaxies and to discover new extremely faint and distant galaxies. These small infant galaxies, seen as they were more than 10 billion years in the past, gradually grew up to become galaxies like the Milky Way that we see today," Bacon concluded."i

European Southern Observatory website described MUSE and its 3D images of the expanding universe under the title "**MUSE: Multi-Unit Spectroscopic Explorer**." It says: "Like SINFONI, MUSE is an integral field spectrograph (IFS). An IFS allows you to observe the entirety of an astronomical object in one go, and for each pixel measures the intensity of the light as a function of its colour, or wavelength. The resulting data is a 3D set where each pixel of the



image has a full spectrum of the light. MUSE splits the field of view into 24 individual image segments or channels which are each split further into 48 slices or "mini slits", giving a total of 1152 mini slits. Each set of 48 mini slits is injected into a spectrograph, which disperses the light into its constituent colours, and MUSE measures over 4000 of these colours! From this, the 3D image is created."[iv]

Conclusion: The Divine Promise

Allah, glory to Him, says in the Glorious Qur'an:

سَنُرِيهِمْ آيَاتِنَا فِي الْآفَاقِ وَفِي أَنفُسِهِمْ حَتَّى يَتَبَيَّنَ لَهُمْ أَنَّهُ الْحَقُّ (53) فصلت

"We shall show them Our portents on the horizons and within themselves until it will be manifest unto them that it is the Truth. Does it not suffice that your Lord is Witness over all things?" (The Qur'an 41:53)

This holy verse contains a promise from Allah, glory to Him, to people that He will show them His signs in the universe and in themselves so that they should be certain that the Qur'an is the truth, and anything else beyond it or in conflict with it is false. The phrase '*shall show*' points to the future, not at the time of the revelation of the Qur'an. The verse is a permanent invitation to continuous search and explore the universe. Science will certainly introduce more sophisticated 3D technologies and instrumentation other than MUSE in the near future that help us to explore the universe and highlight new horizons that we are not able to observe today.

References

- *Al-Madinah Al-Munawarah Mus-haf*
- Picthall, M.M. (1998) *The Meaning of the Glorious Qur'an* (revised and simplified by Ghalib A. Masri).
- Naik, Dr. Zakir. *The Qur'an & Modern Science*. Riyadh: Darussalam.
- Al-Hajj Ahmad, Yusuf. (2010) *Scientific Wonders on the Earth & in Space* Riyadh: Darussalam.
- Bucaille, Maurice. *The Bible, the Qur'an and Science* (translated from French by Alastair D. Panel and the Author) Chicago: Kazi Publications.
- Al-Najjar, Dr. Zaghlool. (2007). *Heaven in the Holy Qur'an*. Beirut: Darul Marefah.



- Abdul Shafi, Dr. Assayid & Al-Shaikh, Saad. (2006). *Modern Scientific Facts on Man and Universe in the Holy Qur'an*. Egypt: Darul Kalima Publishing and distribution.
- Arnaut, Mohammed. (2011). *The Miracle of the Creation of the Skies and Earth*. Egypt: The New Andalusia Publishing and Distribution.
- Al-Taftanazi, Marwan. (2006). The Qur'anic Miracle in Light of the Modern Scientific Discoveries. Beirut: Darul Marefah.

i http://www.pbs.org/wgbh/nova/blogs/physics/2012/10/how-large-is-the-observable-universe/

ii http://www.universetoday.com/13808/how-can-galaxies-recede-faster-than-the-speed-of-light/

iii http://www.iflscience.com/space/eso-s-muse-gets-incredible-3d-look-deep-universe/

iv http://www.eso.org/public/teles-instr/vlt/vlt-instr/muse/

